AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method of generating a test design for a programmable logic device (PLD), the test design utilizing target routing resources of the PLD targeted for testing, the method comprising:

loading an unrouted design;

identifying nets in the unrouted design that can be used to test the target routing resources and setting sources of the identified nets as router source targets;

processing each target routing resource by:

setting the target routing resource as a router starting point,

routing backwards from the target routing resource to one of the router source targets,

identifying a net by the source routed to and setting a load of the net as a router load target,

routing forwards from the target routing resource to the router load target, and

marking [[the]] routing resources used by the net as tested; and

routing a remainder of the unrouted design to create the test design.

2. (Currently Amended) The method of Claim 1, wherein the identifying nets in the unrouted design that can be used to test the target routing resources comprises identifying all nets in the unrouted design that can be used to test the target routing resources.

3. (Currently Amended) The method of Claim 1, further comprising loading a list of the target[[ed]] routing resources, and wherein the marking the routing resources used by [[each]] the net as tested comprises marking the target routing resource[[s]] used by [[each]] the net as tested in the list of the target[[ed]] routing resources.

4. (Currently Amended) The method of Claim 1, further comprising repeating the loading, identifying, processing, and routing if some of the target[[ed]] routing resources were not successfully processed.

5. (Currently Amended) The method of Claim 1, wherein for each target routing resource, routing forwards from the target routing resource to the router load target comprises:

routing forwards from the target routing resource to a first router load target; and

setting, if the routing forwards is unsuccessful, a new router load target comprising another load of the [[identified]] net, and routing from the target routing resource forwards to the new router load target.

6. (Original) The method of Claim 1, further comprising:

marking routing resources that are not yet tested to receive a router expansion bonus.

7. (Original) The method of Claim 1, wherein the routing backwards, identifying, and routing forwards are performed sequentially.

8. (Original) The method of Claim 1, wherein at least two of the routing backwards, identifying, and routing forwards are performed interactively one with another.

9. (Currently Amended) A computer-readable storage medium comprising computer-executable code for generating a test design for a programmable logic device (PLD), the test design utilizing target routing resources of the PLD targeted for testing, the medium comprising:

code for loading an unrouted design;

code for identifying nets in the unrouted design that can be used to test the target routing resources and for setting sources of the identified nets as router source targets;

code for processing each target routing resource, comprising:

code for setting the target routing resource as a router starting point,

code for routing backwards from the target routing resource to one of the

router source targets,

code for identifying a net by the source routed to and setting a load of the net as a router load target,

code for routing forwards from the target routing resource to the router load target, and

code for marking [[the]] routing resources used by the net as tested; and

code for routing a remainder of the unrouted design to create the test design.

10. (Original) The computer-readable storage medium of Claim 9, wherein the code for routing backwards, the code for identifying, and the code for routing forwards act independently from each other.

11. (Original) The computer-readable storage medium of Claim 9, wherein at least two of the code for routing backwards, the code for identifying, and the code for routing forwards are interactive one with another.

12. (Currently Amended) A computer system for generating a test design for a programmable logic device (PLD), the test design utilizing target routing resources of the PLD targeted for testing, the system comprising:

a design loading module for loading an unrouted design;

a net identification module for identifying nets in the unrouted design that can be used to test the target routing resources and for setting sources of the identified nets as router source targets;

a resource processing module for processing each target routing resource, comprising:

a first module for setting the target routing resource as a router starting point,

a second module for routing backwards from the target routing resource to one of the router source targets,

a third module for identifying a net by the source routed to and setting a load of the net as a router load target,

a fourth module for routing forwards from the target routing resource to the router load target, and

a fifth module for marking [[the]] routing resources used by the net as tested; and

a routing module for routing a remainder of the unrouted design to create the test design.

13. (Currently Amended) The computer system of Claim 12 [[9]], wherein the second, third, and fourth modules act independently from each other.

14. (Currently Amended) The computer system of Claim 12 [[9]], wherein at least two of the second, third, and fourth modules are interactive one with another.

15. (Currently Amended) A method of generating a test design for a programmable logic device (PLD), the test design utilizing target routing resources of the PLD targeted for testing, the method comprising:

loading an unrouted design;

identifying nets in the unrouted design that can be used to test the target routing resources and setting loads of the identified nets as router load targets;

processing each target routing resource by:

setting the target routing resource as a router starting point,

routing forwards from the target routing resource to one of the router load targets,

identifying a net by the load routed to and setting a source of the net as a source load target,

routing the net between the target routing resource and the router source target, and

marking [[the]] routing resources used by the net as tested; and

routing a remainder of the unrouted design to create the test design.

16. (Currently Amended) The method of Claim 15, wherein the routing the net between the target routing resource and the router source target comprises routing the net forwards from the router source target to the target routing resource.

17. (Currently Amended) The method of Claim 15, wherein the routing the net between the target routing resource and the router source target comprises routing the net backwards from the target routing resource to the router source target.

18. (Currently Amended) The method of Claim 15, wherein the identifying nets in the unrouted design that can be used to test the target routing resources comprises identifying all nets in the unrouted design that can be used to test the target routing resources.

19. (Currently Amended) The method of Claim 15, further comprising loading a list of the target[[ed]] routing resources, and wherein the marking the routing resources used by [[each]] the net as tested comprises marking the target routing resource[[s]] used by [[each]] the net as tested in the list of the target[[ed]] routing resources.

20. (Currently Amended) The method of Claim 15, further comprising repeating the loading, identifying, processing, and routing if some of the target[[ed]] routing resources were not successfully processed.

21. (Original) The method of Claim 15, further comprising:
        marking routing resources that are not yet tested to receive a router expansion bonus.

22. (Original) The method of Claim 15, wherein the routing forwards, identifying, and routing the net are performed sequentially.

23. (Original) The method of Claim 15, wherein at least two of the routing forwards, identifying, and routing the net are performed interactively one with another.

24. (Currently Amended) A computer-readable storage medium comprising computer-executable code for generating a test design for a programmable logic device (PLD), the test design utilizing target routing resources of the PLD targeted for testing, the medium comprising:

    code for loading an unrouted design;

    code for identifying nets in the unrouted design that can be used to test the target routing resources and for setting loads of the identified nets as router load targets;

    code for processing each target routing resource, comprising:

        code for setting the target routing resource as a router starting point,

        code for routing forwards from the target routing resource to one of the router load targets,

        code for identifying a net by the load routed to and setting a source of the net as a router source target,

        code for routing the net between the target routing resource and the router source target, and

        code for marking [[the]] routing resources used by the net as tested; and

    code for routing a remainder of the unrouted design to create the test design.

25. (Original) The computer-readable storage medium of Claim 24, wherein the code for routing the net between the target routing resource and the router source target comprises code for routing the net forwards from the router source target to the target routing resource.

26. (Original) The computer-readable storage medium of Claim 24, wherein the code for routing the net between the target routing resource and the router source target comprises code for routing the net backwards from the target routing resource to the router source target.

27. (Original) The computer-readable storage medium of Claim 24, wherein the code for routing forwards, the code for identifying, and the code for routing the net act independently from each other.

28. (Original) The computer-readable storage medium of Claim 24, wherein at least two of the code for routing forwards, the code for identifying, and the code for routing the net are interactive one with another.

29. (Currently Amended) A computer system for generating a test design for a programmable logic device (PLD), the test design utilizing target routing resources of the PLD targeted for testing, the system comprising:

a design loading module for loading an unrouted design;

a net identification module for identifying nets in the unrouted design that can be used to test the target routing resources and for setting loads of the identified nets as router load targets;

a resource processing module for processing each target routing resource, comprising:

a first module for setting the target routing resource as a router starting point,

a second module for routing forwards from the target routing resource to one of the router load targets,

a third module for identifying a net by the load routed to and setting a source of the net as a router source target,

a fourth module for routing the net between the target routing resource and the router source target, and

a fifth module for marking [[the]] routing resources used by the net as tested; and

a routing module for routing a remainder of the unrouted design to create the test design.

30. (Original) The computer system of Claim 29, wherein the fourth module routes the net forwards from the router source target to the target routing resource.

31. (Original) The computer system of Claim 29, wherein the fourth module routes the net backwards from the target routing resource to the router source target.

32. (Original) The computer system of Claim 29, wherein the second, third, and fourth modules act independently from each other.

33. (Original) The computer system of Claim 29, wherein at least two of the second, third, and fourth modules are interactive one with another.